UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,206	09/09/2003	Chae-Whan Lim	45682	9142

7590   12/28/2007

Peter L. Kendall
Roylance, Abrams, Berdo & Goodman, L.L.P.
Suite 600
1300 19th Street, N.W.
Washington, DC 20036

EXAMINER
LIEW, ALEX KOK SOON

ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
12/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/657,206	LIM ET AL.
	Examiner	Art Unit	
	Alex Liew	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>15 October 2007</u>.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-5,7-12,14-20,23-25,28 and 31* is/are rejected.

7) ☒ Claim(s) *6,13,21,22,26,27,32 and 33* is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

The English translation filed after final office action on 10/15/07 is entered and made of

record. The references Iwayama (US pub no 2004/0161151) and Feng (US pub no

2004/0120598) used to made rejections are withdrawn.

DETAILED ACTION

Claim Objections

Claims 6, 13, 21, 22, 26, 27, 32 and 33 are objected to as being dependent upon

a rejected base claim, but would be allowable if rewritten in independent form including

all of the limitations of the base claim and any intervening claims.

With regards to claim 6, the examiner's search cannot find any suggestions disclosing a

speech recognizer for generating an input signal to select a save item in the storage

mode in combination with the rest of the limitation of claim 6 and claims 1 and 5. In

addition, Pearson (US pat no 6,705,872) discloses an input saving command using

speech recognition used in the communication art (see col. 16 lines 15 – 20), but not in

pattern recognition.

With regards to claims 13, 22, 27 and 32, see the rationale for claim 6.

With regards to claim 21, the examiner's search does not show any applicable prior art

and / or suggestions disclosing displaying a handwritten character recognition window

when correction character data is not contained in the displayed candidate characters in

combination with its intervening claims and the rest of the limitations of claim 21.

With regards to claims 26 and 33, see the rationale for claim 21.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 2, 5, 7, 9, 10, 14 – 16, 19, 20, 23 – 25, 28, 30 and 31 are rejected

under 35 U.S.C. 103(a) as being unpatentable over Cullen (US pat no 5,465,304) in

view of O'Dell (US pat no 6,956,968) and Berkekey (US pat no 3,701,972).

With regards to claim 1, Cullen discloses an apparatus for recognizing a character

image from a document, comprising

a pre-processor for analyzing pixels of a document image in the recognition

mode, classifying the document image into at least one Character Block (CB) and at

least one Background Block (BB) on the basis of a result of the analysis, binarizing

pixels of the BB and generating a pre-processed document image (see fig 2a and 2b –

220 is one character block, the background block are the pixels which are not 'black' or

not dark in color, see col. 7 lines 46 – 53 – the term compression used in the reference

is read as binarizing),

a character recognizer for recognizing the pre-processed document image and

converting the recognized pre-processed document image into character data (see col.

4 lines 37 – 57 – after segmentation is done, which is the creation of individual blocks,

character recognition is perform on each block, transforming those image data into

character data)

a database for storing the recognized character data in the storage mode (it is

inherent to have a database of registered character templates when recognizing any

type of patterns, if there is no database storing the reference patterns then pattern

recognition cannot be done)

a display unit for displaying the document image (see fig 1 – the computer

monitor shows an image of the scanned document).

But does not discloses recognition error processor part for correcting or replacing

character image. Cullen discloses a character recognition part, but does not take a step

further to find possible candidates characters. O'Dell discloses

a recognition error processor for correcting or replacing erroneously recognized

character data selected by the input unit with character data output by the input unit in

the correction mode (see figure 4 – the handwritten characters are inputted at 238 are

being recognized, the results from recognition are displayed below, candidates

character symbols are displayed to the user, then the user can select the correct

character symbol, the selected candidate symbol will replace the present, see figure 6

where symbols are being handwritten down and) and

a display unit for displaying character data generated during recognition mode

(see figure 7B, section 752 is where candidate characters are displayed).

It would have been obvious to one having ordinary skill in the art at the time of the

invention was made to include recognition error processor part for correcting or

replacing character image because to allow the user to select the correct character that

belongs at a predetermined position (eg. 'famlly' the user is able to replace the 'l' with

an 'i'), to prevent errors in the output of the character recognition.

O'Dell does not disclose an input unit for generating commands for a recognition mode,

a correction mode and a storage mode. Berkekey discloses an input unit for generating

commands for a recognition mode, a correction mode and a storage mode (see col. 129

lines 66 – 67 to col. 130 lines 1 – 10). It would have been obvious to one having

ordinary skill in the art at the time of the invention was made to include a step of

generating commands because to allow the user to manually keep repeating the

recognition step to obtain the correct character or word to store into the database of

reference patterns, to prevent any incorrect registration, so the database will not be

corrupted with incorrect data.

With regards to claim 2, Cullen discloses an apparatus as set forth in claim 1, wherein

the pre-processor comprises:

a skew correction part for classifying stripes having a present length or above

from the document image, calculating direction angles of the classified stripes,

measuring a skew of an object, deciding a skew angle corresponding to the measured

skew and correcting the object skew (see col. 6 lines 31 – 41 – the skew angle of a

rectangle is calculated and then based on the calculated skew angle, appropriate

correction is performed),

an Region Of Contents (ROC) extension part for classifying the document image

in which the object skew is corrected into CBs and BBs, searching for positions of the

CBs to extract the CBs and extending a size of an image of the extracted CBs to a size

of an input image (see col. 6 lines 42 – 57 – after skew correction the system

reclassifies the character and extends the length of the block is they are connected) and

an image binarization part for comparing pixels of the CBs for the document

image with a pixel threshold value, binarizing the pixels of the CBs into pixels having

brightness values for character and background pixels, and binarizing pixel of the BBs

into pixels having a brightness value for background pixels (see col. 7 lines 46 – 53 –

the term compression used in the reference is read as binarizing, the dark pixels

belongs to the character and white or bright pixels belongs to the background).

With regards to claim 5, Cullen discloses all of the claim elements / features as

discussed above in rejection for claim 1 and incorporated herein by reference, but fails

to disclose using a camera to take image of document. Cullen discloses an apparatus

as set forth in claim 1, further comprising a scanner for detecting the document and

generating the document image (see fig 1 – 101 – the scanner). It is very well known to

take images with a camera or a digital camera. One skill in the art would use a camera

over a scanner is because a camera only needs to take snap shots of the document,

while a scanner takes time to scan an entire document, so to save time.

With regards to claim 7, Cullen discloses all of the claim elements / features as

discussed above in rejection for claim 5 and incorporated herein by reference, but fails

to disclose a correction mode. O'Dell discloses an apparatus as set forth in claim 5,

wherein the character recognizer comprises a handwritten character recognizer for

recognizing a received handwritten character image in the correction mode and

converting the recognized handwritten character image into correction character data

necessary for correcting the erroneously recognized character data (see fig 6 – the

received handwritten character is on the right side of the display screen and the

recognized character is on the left side of the display screen, when the user see the

recognized character is not correct the user will replace or correct the character shown

from the candidate character displayed below the recognized character, the character in

the middle). See the motivation provided in claim 1.

With regards to claim 9, see the rationale and rejection for claim 1. In addition, Cullen

discloses a display unit for displaying an input document image (see fig 1); O'Dell

discloses a display area for displaying saved items (see figure 7B, areas 208, 206 and

210 are characters which are already been recognized and stored, in figure 1, element

110) and display area for displaying character data of a selected save items (see figure

7B, areas 208, 206 and 210); Berkeley discloses an input command for recognition

mode, correction mode and storage mode, but does not discloses showing all of the

mentioned items displayed all at once. To have a set of displays displaying the above

mentioned items are a matter of design of how to show the input information and results

shown to the user. One would desired to show the input and output results to the user

all at once because to allow the user to correct unrecognized or miss-recognized

characters in the recognition process to improve readably of the character data when

character data is transfer to a word processor top further edit the details of the input

document.

With regards to claim 10, see the rationale and rejection for claim 2.

With regards to claim 14, see the rationale and rejection for claim 7.

With regards to claim 15, see the rationale and rejection for claim 1.

With regards to claim 16, see the rationale and rejection for claim 2.

With regards to claims 19, 20, 24, 25, 30 and 31, see the rationale and rejection for

claim 7. In addition, in O'Dell, shown in figures 4 and 7B, when the incorrect recognized

character is display on the panel beneath the user is allow to select from a set of

candidates characters.

With regards to claim 23, see the rationale and rejection for claim 1 and the motivation

provided in claim 9 in regards to the multiple displays. In addition, it is well known in the

art to use the 'SAVE' command to stored data in the hard drive or storage medium. One

skill in the art will use this save command because to permanently store important data

in a storage medium, so the user can refer to this data later in time.

With regards to claim 28, see the rationale and rejection for claims 1, 9 and 23. In

addition, it is well known in the art to use an image card bearing the person name as a

form of identification for accessing a terminal or facility.

3.   Claims 3, 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cullen ('304) in view of O'Dell ('968) and Berkekey ('972) as applied to claim 2

further in view of Li (US pat no 7,257,273).

With regards to claim 3, Cullen discloses all of the claim elements / features as

discussed above in rejection for claim 2 and incorporated herein by reference, but fails

to disclose blurred-image detection. Li discloses a blurred-image detection part for any

input digital image by calculating an average energy ratio for the input image,

comparing the average energy ratio with a predetermined threshold value and

determining whether the input image is blurred according to a result of the comparison

(see figure 6, element 608 determines the amount of blur in an image, which is read as

the average energy ratio, and element 610 determines if there is a blur in the image or

not by comparing percentage of blur to a threshold). It would have been obvious to one

having ordinary skill in the art at the time of the invention was made to include image

blur detection step because to allow the system to take appropriate algorithm to correct

the blur in the image to minimize character recognition errors.

With regards to claims 11 and 17, see the rationale and rejection for claim 3.

4.   Claims 4, 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Cullen ('304) in view of O'Dell ('968) and Berkekey ('972) as applied to claim 2

further in view of Komori ('798).

With regards to claim 4, Cullen discloses all of the claim elements / features as

discussed above in rejection for claim 2 and incorporated herein by reference, but fails

to disclose noise reduction step. Komori discloses a pre-processing unit for reducing

noise of the character image (see col. 1 lines 24 – 29). It would have been obvious to

one having ordinary skill in the art at the time of the invention was made to include noise

reduction part because to improve the quality of the character image to minimize

character recognition errors.

With regards to claims 12 and 18, see the rationale and rejection for claim 4.

5.   Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cullen

('304) in view of O'Dell ('968) and Berkekey ('972) as applied to claim 5 further in view

of Kaplan ('077).

Cullen discloses all of the claim elements / features as discussed above in rejection for

claim 2 and incorporated herein by reference, but fails to disclose camera adjusting a

focal distance and exposure time. Kaplan discloses a step to adjust the camera's focal

distance and exposure time (see col. 2 lines 36 – 39 and fig 1). It would have been

obvious to one having ordinary skill in the art at the time of the invention was made to

include camera adjusting a focal distance and exposure time because to avoid having

the capture image to blur, so there is no need of image analysis and processing to

correct the blur in the image to save time.

5.   Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cullen

('304) in view of O'Dell ('968) and Berkekey ('972) as applied to claim 28 further in view

of Iwase (US pub no 2002/0165803).

Cullen discloses all of the claim elements / features as discussed above in rejection for

claim 2 and incorporated herein by reference, but fails to disclose saving personal

information of the user. Iwase stores personal information of the user using a mobile

phone (see fig 6). One skill in the art would stored personal information in his or her mobile phone because in case the user may forget its own information and occasion arise needing the information.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex Liew whose telephone number is (571)272-8623. The examiner can normally be reached on 9:30AM - 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on (571) 272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alex Liew
AU2624
12/23/07

BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600